



## BioBuilder Teacher Professional Development Part 1: What is Synbio/Eau That Smell

### Getting Started: Become a BioBuilder Teacher in 14 days

During our two-week intro module, you'll integrate biology, engineering, and DNA programming to redesign living cells. Finish the workshop with ready to teach lessons for your classroom, and first-hand experience running BioBuilder's iconic Eau That Smell lab.

### Bring modern biotechnology to your school.

BioBuilder's life-changing science curriculum inspires and prepares students for college success and careers in STEM. Our educational resources were co-developed at MIT in partnership with high school teachers. The flexible content meets the needs of educators in comprehensive, magnet, and CTE high schools as well as college instructors leading science and engineering classes. Since 2011, BioBuilder's professional development workshops have directly trained hundreds of teachers each year.

We are thrilled to offer our world-renowned classroom and laboratory activities through a social, online platform. During a two-week window, teachers can participate from anywhere, pacing the lectures, readings, and assignments to fit their learning needs. Even online, teachers can still expect to interact with other teachers, receive feedback from our instructors, and gain hands-on experience with BioBuilder's labs.

#### Enrollment includes:

- Access to the online training portal housing asynchronous lectures,
- A copy of the BioBuilder textbook,
- Access to all presentation slides,
- One lab kit/school/workshop,
- Access to social platforms for community development,
- Participation in a synchronous demonstration of the lab kit by BioBuilder Instructors via Zoom over two half days, and
- Certificate of completion (requires successful completion of of the course).

#### Who should attend:

- Any educator looking to inspire the young innovators in their classrooms
- High school Biology, Biotechnology, Engineering, and STEM teachers, from intro-level through AP, IB and CTE
- Afterschool science club leaders (Science Olympiad, iGEM, science fair, Genes in Space, BIO, etc)
- College level science and engineering instructors

### Are you ready to bring BioBuilder's life-changing science education to your students?

Find more information, upcoming program dates, and registration information at:

[biobuilder.org/program/workshops/](http://biobuilder.org/program/workshops/)

Questions? Email us at  
[info@biobuilder.org](mailto:info@biobuilder.org).



## Part 1: What is Synbio/Eau That Smell

*This module is the first in our Teacher Professional Development sequence.*

In this workshop, the foundations of synthetic biology are established and the differences between synthetic biology and genetics engineering are described. These differences are then illustrated with the Eau That Small lab, in which normally stinky smelling bacteria are made to smell like bananas. Participants will grow microbial cells, measure gene expression, and apply synthetic biology concepts related to system design and logic gates.

**Cost: \$250/teacher**

Discount: \$400 for two teachers from one school. In this case, each teacher will receive a copy of the BioBuilder textbook and they will receive one lab kit to share.

### Meet the Instructors

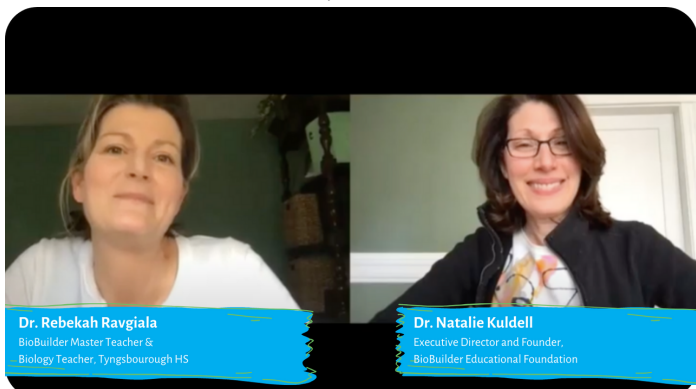


Dr. Natalie Kuldell is the Founder and Executive Director of BioBuilder. Natalie has taught for more than a dozen years in the Department of Biological Engineering at the Massachusetts Institute of Technology. She is a highly regarded educator who develops discovery-based curricula drawn from the current literature to engage students in structured, reasonably authentic laboratory and project-based experiences. She studied Chemistry as an undergraduate at Cornell, completed her doctoral and postdoctoral work at Harvard Medical School, and taught at Wellesley College before joining the faculty at MIT in 2003.



Dr. Rebekah Ravgiala teaches Biology and Advanced Placement Biology at Tyngsborough High School in Tyngsborough, Massachusetts. She holds a B.A. in Biology and a doctorate in Mathematics and Science Education. She has been actively involved in the BioBuilder community since 2011, leading a BioBuilderClub team, and serving as a member of its Board of Directors. She is a recipient of the ASBMB Fostering K12/University Partnership Grant and the AMGEN Excellence in Science Teaching Award.

If you'd like to preview what Part 1: Eau That Smell has in store, check out our trailer



Dr. Rebekah Ravgiala  
BioBuilder Master Teacher &  
Biology Teacher, Tyngsborough HS

Dr. Natalie Kuldell  
Executive Director and Founder,  
BioBuilder Educational Foundation

### Feedback from Past Attendees

“The format and the labs are very well structured. Excellent instructors.”

“I learned a lot of new strategies to use right away! This was awesome!!!”

“It was a lot of fun and quite challenging. Everything was incredibly well designed and organized and the manipulatives were amazing.”

What next? Check out the next module in our Professional Development sequence:  
Part 2: What A Colorful World/Teaching BioDesign